Complete Summary

GUIDELINE TITLE

Treatment of pressure ulcers.

BIBLIOGRAPHIC SOURCE(S)

Agency for Health Care Policy and Research (AHCPR). Treatment of pressure ulcers. Rockville (MD): U.S. Department of Health and Human Services, Public Health Service, AHCPR; 1994 Dec. 154 p. (Clinical practice guideline; no. 15). [333 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Pressure ulcers

GUIDELINE CATEGORY

Evaluation
Treatment

CLINICAL SPECIALTY

Dermatology
Family Practice
Geriatrics
Internal Medicine
Nursing
Physical Medicine and Rehabilitation
Plastic Surgery
Surgery

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Plans
Nurses
Occupational Therapists
Physical Therapists
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To present a comprehensive program for treating adults with pressure ulcers.

TARGET POPULATION

Adults with pressure ulcers

INTERVENTIONS AND PRACTICES CONSIDERED

- Support Surfaces (Air Fluidized; Low-Air-Loss; Alternating Air; Static Flotation; Foam; Standard Mattress)
- Debridement (Sharp; Mechanical; Enzymatic; Autolytic)
- Wound Cleansing (Solutions; Irrigation Pressure)
- Wound Dressings (Dry; Moist; Wet-to-Dry)
- Electrotherapy
- Hyperbaric Oxygen
- Irradiation (Infrared; Ultraviolet; Low Energy Laser)
- Ultrasound
- Pharmacologic Agents

MAJOR OUTCOMES CONSIDERED

- Healing and recurrence of pressure ulcers
- Quality of life and patient satisfaction

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases
Searches of Unpublished Data

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The National Library of Medicine (NLM) conducted a comprehensive literature review based on panel request, and panel members scrutinized evidence of clinical

benefits or harms and reviewed prevailing practice as documented in professional standards and written reports. Retrieval of published manuscripts and relevant unpublished material was comprehensive. Relevant literature was identified through computerized searches of articles published between 1966 and May 1, 1993. MEDLARS was the primary database searched, with supplemental databases used as necessary. Literature was also identified through (1) hand searches of journals not referenced in computerized databases; (2) reference lists from review articles; (3) person files of panelists; (4) recommendations of peer reviewers, open forum participants and companies manufacturing products used to treat pressure ulcers; and (5) research reports submitted by investigators engaged in pressure ulcer research.

NUMBER OF SOURCE DOCUMENTS

More than 45,000 abstracts (including duplicates from several databases) were reviewed and approximately 1,700 manuscripts were selected for further evaluation

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The panel assigned each recommendation of rating of A, B, or C to indicate the strength of the evidence supporting the recommendation. The ratings were based on the following criteria:

A: Results of two or more randomized controlled clinical trials on pressure ulcers in humans provide support.

B: Results of two or more controlled clinical trials on pressure ulcers in humans provide support, or when appropriate, results of two or more controlled trials in an animal model provide indirect support.

C: This rating requires one or more of the following: (1) results of one controlled trial; (2) results of at least two case series/descriptive studies on pressure ulcers in humans; or (3) expert opinion.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline was written after the panel evaluated the scientific evidence and expert clinical opinion and considered the benefits and harms of each potential recommendation. Recommendations were based on the quality and quantity of supporting research evidence (either direct or indirect) indicating that a certain action would produce a favorable result. In the absence of conclusive research evidence, expert opinion was sought and documented as such. Expert opinion (as reflected in review articles, textbooks, the standards and guidelines set by professional organizations, and the judgment of panel members and peer reviewers) is an important part of guideline development because it is unlikely that an adequate scientific database will exist to support every recommendation.

The experience of the conduct and utilization of research in nursing (CURN) project showed that guidelines are most effective when they are specific. For this reason, the panel attempted to be as specific as possible while allowing enough flexibility to respect expert judgment and patient preferences in individual cases.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Miller and Delozier estimated that the total national cost of pressure ulcer treatment exceed $1.335 billion. Implementation of the recommendations of this guideline is estimated to reduce the cost of pressure ulcer treatment by 3 percent or $40 million.

Miller H, Delozier J. Cost implications of the pressure ulcer treatment guideline. Columbia (MD): Center for Health Policy Studies; 1994. Contract No. 282-91-0070. 17 p. Sponsored by the Agency for Health Care Policy and Research.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A draft version of the document was presented at a conference sponsored by the National Pressure Ulcer Advisory Panel (NPUAP) and Wound, Ostomy, and Continence Nurses Society (WOCN) and attended by more than 300 persons. Additional formal peer review, by individuals representing a broad range of professional disciplines, clinical practice arenas, and geographic regions, was undertaken. Peer reviewers were asked specifically to evaluate (1) the comprehensiveness of the literature review and identify any literature evidence that was omitted or inappropriately or incompletely cited, (2) the conclusions based on the literature review and analysis, and (3) the guideline recommendations based on practical realities. Their comments were distributed to panel members, whose subsequent deliberations led to revisions of the guideline.

The panel also subjected the pressure ulcer treatment guideline to pilot review, which comprised three specific activities. First, health care agencies were invited to examine the hypothetical impact of the guideline on their settings in terms of cost, resources, and practicability. Second, health care agencies were invited to examine the guideline, test it informally on a small number of patients in the practice setting, and provide feedback to the panel. Third, selected sites were asked to provide a somewhat more formal evaluation of the guideline, as time allowed, setting in motion a plan for implementing guideline recommendations. Such in-depth testing provided additional useful information prior to final revisions.

Key organizations representing various classifications of health care settings were asked to conduct pilot reviews. A broad diversity of clinical representation was sought. University, community, and small rural hospitals were selected as well as nursing home chains, small private nursing homes, and visiting-nurse and other home health care agencies. Attention was also given to the geographic distribution of pilot reviewers.

The results of peer and pilot review were collated, and appropriate suggestions were incorporated into the guideline.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The strength of evidence definitions are provided at the end of the "Major Recommendations" field.

Assessment

Assessing the Pressure Ulcer

Assess the pressure ulcer(s) initially for location, stage, (National Pressure Ulcer Advisory Panel [NPUAP], 1989) size, sinus tracts, undermining, tunneling, exudate, necrotic tissue, and the presence or absence of granulation tissue and epithelialization. (Strength of Evidence = C.)

Reassess pressure ulcers at least weekly. If the condition of the patient or of the wound deteriorates, reevaluate the treatment plan as soon as any evidence of deterioration is noted. (Strength of Evidence = C.)

A clean pressure ulcer should show evidence of some healing within 2 to 4 weeks. If no progress can be demonstrated, reevaluate the adequacy of the overall treatment plan as well as adherence to this plan, making modifications as necessary. (Strength of Evidence = C.)

Assessing the Individual With a Pressure Ulcer

History and Physical Examination

Perform a complete history and physical examination, because a pressure ulcer should be assessed in the context of the patient's overall physical and psychosocial health. (Strength of Evidence = C.)

Assessing Complications

Clinicians should be alert to the potential complications associated with pressure ulcers. (Strength of Evidence = C.)

Nutritional Assessment and Management

Ensure adequate dietary intake to prevent malnutrition to the extent that this is compatible with the individual's wishes. (Strength of Evidence = B.)

Perform an abbreviated nutritional assessment, as defined by the Nutrition Screening Initiative, at least every 3 months for individuals at risk for malnutrition. These include individuals who are unable to take food by mouth or who experience an involuntary change in weight. (Strength of Evidence = C.)

Encourage dietary intake or supplementation if an individual with a pressure ulcer is malnourished. If dietary intake continues to be inadequate, impractical, or impossible, nutritional support (usually tube feeding) should be used to place the patient into positive nitrogen balance (approximately 30 to 35 calories/kg/day and 1.25 to 1.50 grams of protein/kg/day) according to the goals of care. (Strength of Evidence = C.)

Give vitamin and mineral supplements if deficiencies are confirmed or suspected. (Strength of Evidence = C.)

Pain Assessment and Management

Assess all patients for pain related to the pressure ulcer or its treatment. (Strength of Evidence = C.)

Manage pain by eliminating or controlling the source of pain (e.g., covering wounds, adjusting support surfaces, repositioning). Provide analgesia as needed and appropriate. (Strength of Evidence = C.)

Psychosocial Assessment and Management

All individuals being treated for pressure ulcers should undergo a psychosocial assessment to determine their ability and motivation to comprehend and adhere to the treatment program. The assessment should include but not be limited to the following:

- Mental status, learning ability, depression.
- Social support.
- Polypharmacy or overmedication.
- Alcohol and/or drug abuse.
- Goals, values, and lifestyle.
- Sexuality.

- Culture and ethnicity.
- Stressors.

Periodic reassessment is recommended. (Strength of Evidence = C).

Assess resources (e.g., availability and skill of caregivers, finances, equipment) of individuals being treated for pressure ulcers in the home. (Strength of Evidence = C.)

Set treatment goals consistent with the values and lifestyle of the individual, family, and caregiver. (Strength of Evidence = C.)

Arrange interventions to meet identified psychosocial needs and goals. Follow-up should be planned in cooperation with the individual and caregiver. (Strength of Evidence = C.)

Managing Tissue Loads

While in Bed

Positioning Techniques

Avoid positioning patients on a pressure ulcer. (Strength of Evidence = C.)

Use positioning devices to raise a pressure ulcer off the support surface. If the patient is no longer at risk for developing pressure ulcers, these devices may reduce the need for pressure-reducing overlays, mattresses, and beds. Avoid using donut-type devices. (Strength of Evidence = C.)

Establish a written repositioning schedule. (Strength of Evidence = C.)

Assess all patients with existing pressure ulcers to determine their risk for developing additional pressure ulcers. For those individuals who remain at risk, institute the following measures recommended in Pressure Ulcers in Adults: Prediction and Prevention. Clinical Practice Guideline, No. 3:

- Avoid positioning immobile individuals directly on their trochanters and use devices such as pillows and foam wedges that totally relieve pressure on the heels, most commonly by raising the heels off the bed. (Strength of Evidence = C.)
- Use positioning devices such as pillows or foam to prevent direct contact between bony prominences (such as knees or ankles). (Strength of Evidence = C.)
- Maintain the head of the bed at the lowest degree of elevation consistent with medical conditions and other restrictions. Limit the amount of time the head of the bed is elevated. (Strength of Evidence = C.)

Support Surfaces

Assess all patients with existing pressure ulcers to determine their risk for developing additional pressure ulcers. If the patient remains at risk, use a pressure-reducing surface. (Strength of Evidence = C.)

Use a static support surface if a patient can assume a variety of positions without bearing weight on a pressure ulcer and without "bottoming out." (Strength of Evidence = B.)

Use a dynamic support surface if the patient cannot assume a variety of positions without bearing weight on a pressure ulcer, if the patient fully compresses the static support surface, or if the pressure ulcer does not show evidence of healing. (Strength of Evidence = B.)

If a patient has large Stage III or Stage IV pressure ulcers on multiple turning surfaces, a low-air-loss bed or an air-fluidized bed may be indicated. (Strength of Evidence = C.)

When excess moisture on intact skin is a potential source of maceration and skin breakdown, a support surface that provides airflow can be important in drying the skin and preventing additional pressure ulcers. (Strength of Evidence = C.)

While Sitting

Positioning Techniques

A patient who has a pressure ulcer on a sitting surface should avoid sitting. If pressure on the ulcer can be relieved, limited sitting may be allowed. (Strength of Evidence = C.)

Consider postural alignment, distribution of weight, balance, stability, and pressure relief when positioning sitting individuals. (Strength of Evidence = C.)

Reposition the sitting individual so the points under pressure are shifted at least every hour. If this schedule cannot be kept or is inconsistent with overall treatment goals, return the patient to bed. Individuals who are able should be taught to shift their weight every 15 minutes. (Strength of Evidence = C.)

Support Surfaces

Select a cushion based on the specific needs of the individual who requires pressure reduction in a sitting position. Avoid donut-type devices. (Strength of Evidence = C.)

Ulcer Care

Debridement

Remove devitalized tissue in pressure ulcers when appropriate for the patient's condition and consistent with patient goals. (Strength of Evidence = C.)

Select the method of debridement most appropriate to the patient's condition and goals. Sharp, mechanical, enzymatic, and/or autolytic debridement techniques may be used when there is no urgent clinical need for drainage or removal of devitalized tissue. If there is urgent need for debridement, as with advancing cellulitis or sepsis, sharp debridement should be used. (Strength of Evidence = C.)

Use clean, dry dressings for 8 to 24 hours after sharp debridement associated with bleeding; then reinstitute moist dressings. Clean dressings may be used in conjunction with mechanical or enzymatic debridement techniques. (Strength of Evidence = C.)

Heel ulcers with dry eschar need not be debrided if they do not have edema, erythema, fluctuance, or drainage. Assess these wounds daily to monitor for pressure ulcer complications that would require debridement (e.g., edema, erythema, fluctuance, drainage). (Strength of Evidence = C.)

Prevent or manage pain associated with debridement as needed. (Strength of Evidence = C.)

Wound Cleansing

Cleanse wounds initially and at each dressing change. (Strength of Evidence = C.)

Use minimal mechanical force when cleansing the ulcer with gauze, cloth, or sponges. (Strength of Evidence = C.)

Do not clean ulcer wounds with skin cleansers or antiseptic agents (e.g., povidone iodine, iodophor, sodium hypochlorite solution [Dakin's® solution], hydrogen peroxide, acetic acid). (Strength of Evidence = B.)

Use normal saline for cleansing most pressure ulcers. (Strength of Evidence = C.)

Use enough irrigation pressure to enhance wound cleansing without causing trauma to the wound bed. Safe and effective ulcer irrigation pressures range from 4 to 15 psi. indicates the irrigation pressure delivered by various clinically available devices. (Strength of Evidence = B.)

Consider whirlpool treatment for cleansing pressure ulcers that contain thick exudate, slough, or necrotic tissue. Discontinue whirlpool when the ulcer is clean. (Strength of Evidence = C.)

Dressings

Use a dressing that will keep the ulcer bed continuously moist. Wet-to-dry dressings should be used only for debridement and are not considered continuously moist saline dressings. (Strength of Evidence = B.)

Moist Wound Dressing

Use clinical judgment to select a type of moist wound dressing suitable for the ulcer. Studies of different types of moist wound dressings showed no differences in pressure ulcer healing outcomes. (Strength of Evidence = B.)

Choose a dressing that keeps the surrounding intact (periulcer) skin dry while keeping the ulcer bed moist. (Strength of Evidence = C.)

Choose a dressing that controls exudate but does not desiccate the ulcer bed. (Strength of Evidence = C.)

Consider caregiver time when selecting a dressing. (Strength of Evidence = B.)

Eliminate wound dead space by loosely filling all cavities with dressing material. Avoid overpacking the wound. (Strength of Evidence = C.)

Monitor dressings applied near the anus, since they are difficult to keep intact. (Strength of Evidence = C.)

Adjunctive Therapies:

Consider a course of treatment with electrotherapy for Stage III and IV pressure ulcers that have proved unresponsive to conventional therapy. Electrical stimulation may also be useful for recalcitrant Stage II ulcers. (Strength of Evidence = B.)

The therapeutic efficacy of hyperbaric oxygen; infrared, ultraviolet, and low-energy laser irradiation; and ultrasound has not been sufficiently established to permit recommendation of these therapies for the treatment of pressure ulcers. (Strength of Evidence = C.)

The therapeutic efficacy of miscellaneous topical agents (e.g., sugar, vitamins, elements, hormones, other agents), growth factors, and skin equivalents has not yet been sufficiently established to warrant recommendation of these agents at this time. (Strength of Evidence = C.)

The therapeutic efficacy of systemic agents other than antibiotics has not been sufficiently established to permit their recommendation for the treatment of pressure ulcers. (Strength of Evidence = C.)

Managing Bacterial Colonization and Infection

Pressure Ulcer Colonization and Infection

Minimize pressure ulcer colonization and enhance wound healing by effective wound cleansing and debridement. (Strength of Evidence = A.) If purulence or foul odor is present, more frequent cleansing and possibly debridement are required. (Strength of Evidence = C.)

Do not use swab cultures to diagnose wound infection, because all pressure ulcers are colonized. (Strength of Evidence = C.)

Consider initiating a 2-week trial of topical antibiotics for clean pressure ulcers that are not healing or are continuing to produce exudate after 2 to 4 weeks of optimal patient care (as defined in this guideline). The antibiotic should be effective against gram-negative, gram-positive, and anaerobic organisms (e.g., silver sulfadiazine, triple antibiotic). (Strength of Evidence = A.)

Perform quantitative bacterial cultures of the soft tissue and evaluate the patient for osteomyelitis when the ulcer does not respond to topical antibiotic therapy. (Strength of Evidence = C.)

Do not use topical antiseptics (e.g., povidone iodine, iodophor, sodium hypochlorite [Dakin's® solution], hydrogen peroxide, acetic acid) to reduce bacteria in wound tissue. (Strength of Evidence = B.)

Institute appropriate systemic antibiotic therapy for patients with bacteremia, sepsis, advancing cellulitis, or osteomyelitis. (Strength of Evidence = A.) Systemic antibiotics are not required for pressure ulcers with only clinical signs of local infection. (Strength of Evidence = C.)

Protect pressure ulcers from exogenous sources of contamination (e.g., feces). (Strength of Evidence = C.)

Infection Control

Follow body substance isolation (BSI) precautions or an equivalent system appropriate for the health care setting and the patient's condition when treating pressure ulcers. (Strength of Evidence = C.)

Use clean gloves for each patient. When treating multiple ulcers on the same patient, attend to the most contaminated ulcer last (e.g., in the perianal region). Remove gloves and wash hands between patients. (Strength of Evidence = C.)

Use sterile instruments to debride pressure ulcers. (Strength of Evidence = C.)

Use clean dressings, rather than sterile ones, to treat pressure ulcers, as long as dressing procedures comply with institutional infection-control guidelines. (Strength of Evidence = C.)

Clean dressings may also be used in the home setting. Disposal of contaminated dressings in the home should be done in a manner consistent with local regulations. (Strength of Evidence = C.)

Operative Repair of Pressure Ulcers

Patient Selection

Determine patient need and suitability for operative repair when clean Stage III or Stage IV pressure ulcers do not respond to optimal patient care (as defined in this guideline). Possible candidates are medically stable and adequately nourished and can tolerate operative blood loss and postoperative immobility. Quality of life,

patient preferences, treatment goals, risk of recurrence, and expected rehabilitative outcome are additional considerations. (Strength of Evidence = C.)

Controlling Factors That Impair Healing

Promote successful surgical closure by controlling or correcting factors that may be associated with impaired healing, such as smoking, spasticity, levels of bacterial colonization, incontinence, and urinary tract infection. (Strength of Evidence = C.)

Operative Procedures

Use the most effective and least traumatic method to repair the ulcer defect. Wounds can be closed by direct closure, skin grafting, skin flaps, musculocutaneous flaps, and free flaps. To minimize recurrence, the choice of operative technique is based on the individual patient's needs and overall goals. (Strength of Evidence = C.)

Prophylactic ischiectomy is not recommended because it often results in perineal ulcers and urethral fistulas, which are more threatening problems than ischial ulcers. (Strength of Evidence = C.)

Postoperative Care

Minimize pressure to the operative site by use of an air-fluidized bed, a low-air-loss bed, or a Stryker frame for a minimum of 2 weeks. Assess postoperative viability of the surgical site as clinically indicated. Have the patient slowly increase periods of time sitting or lying on the flap to increase its tolerance to pressure. To determine the degree of tolerance, monitor the flap for pallor, redness, or both that do not resolve after 10 minutes of pressure relief. Ongoing patient education is imperative to reduce the risk of recurrence. (Strength of Evidence = C.)

Assess for recurrence of pressure ulcers as an ongoing component of care. Caregivers should provide education and encourage adherence to measures for pressure reduction, daily skin examination, and intermittent relief techniques. (Strength of Evidence = A.)

Education and Quality Improvement

Education

Prevention and Treatment: A Continuum

Design, develop, and implement educational programs for patients, caregivers, and health care providers that reflect a continuum of care. The program should begin with a structured, comprehensive, and organized approach to prevention and should culminate in effective treatment protocols that promote healing as well as prevent recurrence. (Strength of Evidence = C.)

Develop educational programs that target appropriate health care providers, patients, family members, and caregivers. Present information at an appropriate

level for the target audience to maximize retention and ensure a carryover into practice. Use principles of adult learning (e.g., explanation, demonstration, questioning, group discussion, drills). (Strength of Evidence = C.)

Involve the patient and caregiver, when possible, in pressure ulcer treatment and prevention strategies and options. Include information on pain, discomfort, possible outcomes, and duration of treatment, if known. Encourage the patient to actively participate in and comply with decisions regarding pressure ulcer prevention and treatment. (Strength of Evidence = C.)

Educational programs should identify those responsible for pressure ulcer treatment and describe each person's role. The information presented and the degree of participation expected should be appropriate to the audience. (Strength of Evidence = C.)

Assessing Tissue Damage

Educational programs should emphasize the need for accurate, consistent, and uniform assessment, description, and documentation of the extent of tissue damage. (Strength of Evidence = C.)

Include the following information when developing an educational program on the treatment of pressure ulcers (Strength of Evidence = C):

- Etiology and pathology.
- Risk factors.
- Uniform terminology for stages of tissue damage based on specific classification.
- Principles of wound healing.
- Principles of nutritional support with regard to tissue integrity.
- Individualized program of skin care.
- Principles of cleansing and infection control.
- Principles of postoperative care including positioning and support surfaces.
- Principles of prevention to reduce recurrence.
- Product selection (i.e., categories and uses of support surfaces, dressings, topical antibiotics, or other agents).
- Effects or influence of the physical and mechanical environment on the pressure ulcer, and strategies for management.
- Mechanisms for accurate documentation and monitoring of pertinent data, including treatment interventions and healing progress.

Update educational programs on an ongoing and regular basis to integrate new knowledge, techniques, or technologies. (Strength of Evidence = C.)

Monitoring Outcomes

Evaluate the effectiveness of an educational program in terms of measurable outcomes: Implementation of guideline recommendations, healing of existing ulcers, reducing the incidence of new or recurrent ulcers, and preventing the deterioration of existing ulcers. (Strength of Evidence = C.)

Include a structured, comprehensive, and organized educational program as an integral part of quality improvement monitoring. Use information from quality assurance/improvement surveys to identify deficiencies, to evaluate the effectiveness of care, and to determine the need for education and policy changes. Focus inservice training on identified deficiencies. (Strength of Evidence = C.)

Quality Improvement

Obtain intradepartmental and interdepartmental QI support for pressure ulcer management as a major aspect of care. (Strength of Evidence = C.)

Convene an interdisciplinary committee of interested and knowledgeable persons to address QI in pressure ulcer management. (Strength of Evidence = C.)

Identify and monitor the occurrence of pressure ulcers to determine their incidence and prevalence. This information will serve as a baseline to the development, implementation, and evaluation of treatment protocols. (Strength of Evidence = C.)

Monitor the incidence and prevalence of pressure ulcers on a regular basis. (Strength of Evidence = C.)

Develop, implement, and evaluate educational programs based on the data obtained from QI monitoring. (Strength of Evidence = C.)

Definitions

The panel assigned each recommendation of rating of A, B, or C to indicate the strength of the evidence supporting the recommendation. The ratings were based on the following criteria:

A: Results of two or more randomized controlled clinical trials on pressure ulcers in humans provide support.

B: Results of two or more controlled clinical trials on pressure ulcers in humans provide support, or when appropriate, results of two or more controlled trials in an animal model provide indirect support.

C: This rating requires one or more of the following: (1) results of one controlled trial; (2) results of at least two case series/descriptive studies on pressure ulcers in humans; or (3) expert opinion.

CLINICAL ALGORITHM(S)

Clinical algorithms are provided for the management of pressure ulcers, nutritional assessment and support, management of tissue loads, ulcer care, and managing bacterial colonization and infection.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on evidence obtained through extensive literature reviews. Where such evidence was lacking, consensus opinion of a panel of selected experts was used to formulate recommendations. The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Reduction in incidence and severity of pressure ulcers
- Improvement in healing of pressure ulcers
- Reduction in recurrence of pressure ulcers

Subgroups Most Likely to Benefit:

High-risk groups for developing pressure ulcers include elderly patients admitted to the hospital for femoral fracture, critical care patients, individuals in skilled care facilities and nursing homes, and quadriplegic patients.

POTENTIAL HARMS

Operative procedures to repair pressure ulcers may last up to 1-3 hours and may result in a blood loss of up to 1,500 mL. Complications of flap reconstruction have included hematoma, wound separation, flap necrosis, flap dehiscence, infection and seroma. Recurrence rates for pressure ulcers following operative repair range form 13-56%.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Decisions to adopt particular recommendations must be made by practitioners in light of available resources and circumstances presented by the individual patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

RELATED QUALITY TOOLS

- Treating Pressure Sores. Consumer Guide Number 15

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Agency for Health Care Policy and Research (AHCPR). Treatment of pressure ulcers. Rockville (MD): U.S. Department of Health and Human Services, Public Health Service, AHCPR; 1994 Dec. 154 p. (Clinical practice guideline; no. 15). [333 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1994 Dec (reviewed 2000)

GUIDELINE DEVELOPER(S)

Agency for Healthcare Research and Quality - Federal Government Agency [U.S.]

SOURCE(S) OF FUNDING

United States Government

GUIDELINE COMMITTEE

Treatment of Pressure Ulcers Guideline Panel

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

The panel was a multidisciplinary, 20-member committee consisting of seven physicians (family medicine, dermatology, plastic surgery, surgery-nutrition, gerontology, and physical medicine and rehabilitation), seven nurses (rehabilitation, aging, acute care, enterostomal therapy, wound care, nutrition, healthcare education, and management), one occupational therapist (rehabilitation), two biomedical engineers (rehabilitation), two basic scientists (wound healing), and one consumer representative. The panel also engaged a number of consultants with expertise in geriatric medicine, wound care research, nutrition, health economics, guideline development methodology, research utilization, clinical algorithm development, infection control, and consumer interests.

Names of Committee Members: Nancy Bergstrom, PhD, RN, FAAN (Chair); Richard M. Allman, MD; Oscar M. Alvarez, PhD; M. Alisan Bennett, EdD, RN; Carolyn E. Carlson, PhD, RN; Rita A. Frantz, PhD, RN, FAAN; Susan L. Garber, MA, OTR, FAOTA; Bettie S. Jackson, EdD, MBA, FAAN; Mitchell V. Kaminski, Jr., MD, SC, FACS, FICS, FACN; Mildred G. Kemp, PhD, RN, CETN, FAAN; Thomas A. Krouskop, PhD; Victor L. Lewis, Jr., MD, FACS; JoAnn Maklebust, MSN, RN, CS; David J. Margolis, MD, FACP; Elena M. Marvel, MSN, MA, RN; Steven I. Reger, PhD, CP; George T. Rodeheaver, PhD; Richard Salcido, MD, FAAPMR; George C. Xakellis, MD; Gary M. Yarkony, MD, FAAPMR

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. Per a recent Evidence-based Practice Center (EPC) report commissioned by the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research [AHCPR]), the guideline is considered, in whole or in part, to still be current.

Please see the National Guideline Clearinghouse summaries Treatment of Pressure Ulcers (2002) and Prevention of Treatment Ulcers (2002) authored by the University of Iowa Gerontological Nursing Interventions Research Center. These guidelines were adapted from the AHCPR Clinical Guidelines "Pressure Ulcers in Adults: Prediction and Prevention" (May 1992) and "Treatment of Pressure Ulcers" (December 1994) and updates certain information contained in these guidelines.

GUIDELINE AVAILABILITY

Electronic copies: Available from the National Library of Medicine's HSTAT database.

Print copies: Information regarding the availability of these publications can be found in the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research [AHCPR]) Publications Catalog, which is available at the AHRQ Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following documents are available:

1. Pressure ulcer treatment. Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, 1994 Dec. 25 p. (Quick reference guide for clinicians; no. 15). AHCPR Publication No. 95-0653. Available from the National Library of Medicine's HSTAT database.
2. Bergstrom N, Allman RM, Alvarez OM, et al. Treating pressure ulcers. Volume I and II. Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, 1994 Dec. 812 p. (Guideline technical report; no. 15). AHCPR Publication No. 96-N014.
3. Miller H, Delozier J. Cost implications of the pressure ulcer treatment guideline. Columbia, MD: Center for Health Policy Studies, 1994. 17 p.

Print copies: Information regarding the availability of these publications can be found in the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research [AHCPR]) Publications Catalog, which is available at the AHRQ Web site.

PATIENT RESOURCES

The following documents are available:

1. Treating pressure sores. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, 1994 Dec. 24 p. (Consumer guide; no. 15). AHCPR Publication No. 95-0654. Available from the National Library of Medicine's HSTAT database.
2. Tratamientos para las llagas por contacto. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, 1994 Dec. (Consumer guide, Spanish; no. 15). AHCPR Publication No. 95-0655. Available from the National Library of Medicine's HSTAT database.

Print copies: Information regarding the availability of these publications can be found in the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research [AHCPR]) Publications Catalog, which is available at the AHRQ Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on June 1, 1998. It was verified by the guideline developer on December 1, 1998. Per a recent Evidence-based Practice Center (EPC) report commissioned by the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research

[AHCPR]) in 2000, the guideline is considered, in whole or in part, to still be current.

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